DRAINAGE OF PROSTATIC ABSCESSES THROUGH THE ISCHIO-RECTAL FOSSA.

BY WILLIAM C. LUSK, M.D.,

OF NEW YORK.

Professor of Clinical Surgery and Lecturer on the Diseases of the Rectum at the New York
University and Bellevue Hospital Medical College; Assistant Visiting Surgeon
to Bellevue and St. Vincent's Hospitals.

A MAN, aged 23, was admitted to Bellevue Hospital suffering from an abscess of the prostate. The abscess was felt by rectal examination as a tumor the size of a small hen's egg, situated in the median line and extending over to the left side. The patient gave no history of venereal infection, but said that he had been recently undergoing urethral instrumentation.

Operation.—In opening the abscess the approach to the prostate was by a lateral route which, being along natural planes of separation of the tissues through the ischio-rectal fossa and along the anterior pubic fibres of the levator ani, afforded easy access to the site of incising the tumor.

The accompanying figures, drawings over photographs of the dissections, illustrate the surgical anatomy of this method of lateral approach to the prostate for opening an abscess, and the steps of the operation. Drainage was made through the patient's left ischio-rectal fossa, though the illustrations show the anatomy of the right side.

Fig. 1 shows the line of the skin incision (*A*) projected upon the fascia forming the floor of the ischio-rectal fossa, and its relations to the tuberosity of the ischium, the external sphincter, and the gluteus maximus. There is here some distortion from the normal relation to the anal opening, owing to the relaxation of the sphincters in the dead subject. The incision starts at the fore part of the prominence of the tuberosity of the ischium at its inner aspect, which point is about on a transverse line passing through the anterior margin of the closed anal opening, and is carried diagonally backward and inward across the floor of the ischio-rectal fossa in the space between the fibres of the external sphincter and the gluteus maximus muscles. The front portion of this incision, lying just internal to the tuberosity of the ischium, is deepened until it extends about one-half to three-quarters of an inch above the level of the extremity of the tuberosity, after which the finger introduced into the wound and passed along the smooth obturator fascia (Fig. 2, *B*) covering the inner surface of the tuberosity, enters a distinct fascial compartment (Fig. 2).

Fig. 2 shows this fascial compartment which lies in the outer portion of the ischio-rectal fossa, opened up. Usually no vessels traverse its space. It is limited externally by the firm obturator fascia (*B*) which is the guide to its ready detection by the entering finger, as described above. The apex of the space passes a little forwards above a transversely elevated band of tissue (*C*) in its anterior wall. The contour of this elevated band conforms to the base of the triangular ligament and, lying along the latter, the transverse perineal vessels and nerves. The fascia at the apex of the compartment—*i.e.*, just above the transverse band and consequently above the base of the triangular ligament—is now carefully punctured in a forward direction (indicated by the arrow), after which the finger is pushed through the opening into a plane of cleavage above the triangular ligament along the anterior bundle of levator ani fibres (Fig. 3, *D*), which follows the pubic ramus.

Fig. 3 shows the plane of cleavage along the anterior levator ani fibres above the triangular ligament, which the finger enters and dilates through the incision at the apex of the fascial compartment. In the dissection from which this picture was made, the base of the triangular ligament (*E*—posterior layer) on the right side was cut transversely across at the fore part of the ridge of tissue (*C*), after having first severed from the ramus for a short distance in front of the fascial compartment the superficial fascia, and with it the origin of the transversus perinei muscle. The tissues of the urethral triangle in front of this dividing incision,

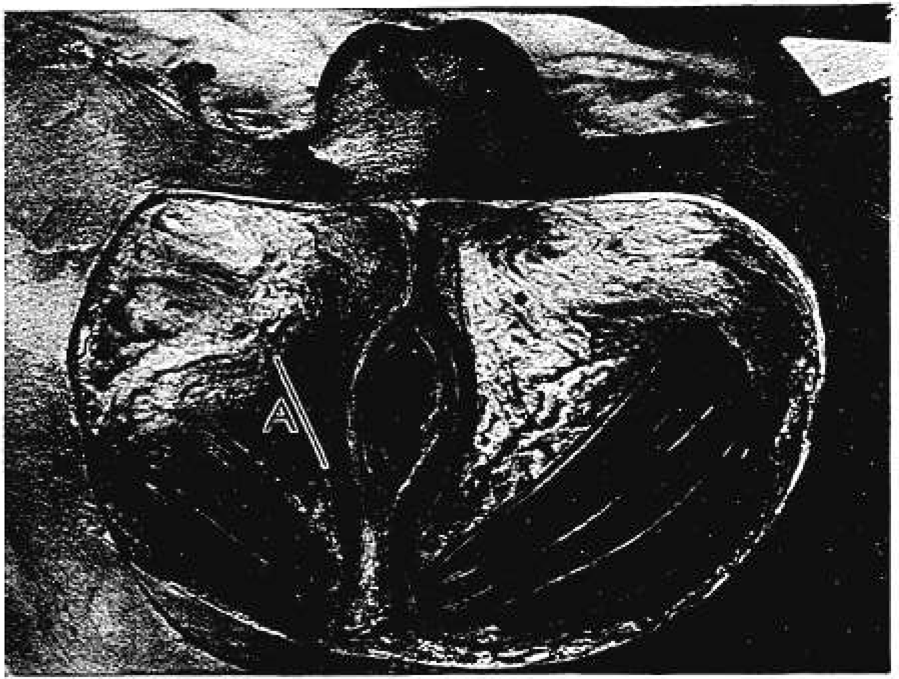

FIG. 1.—A line of skin incision projected upon the fascia forming the floor of the ischio-rectal fossa. It begins at the forepart of the prominence of the tuberosity of the ischium about on a transverse line passing through the anterior margin of the contracted anal opening, and passes backward and inward between the external sphincter and the gluteus maximus muscles.

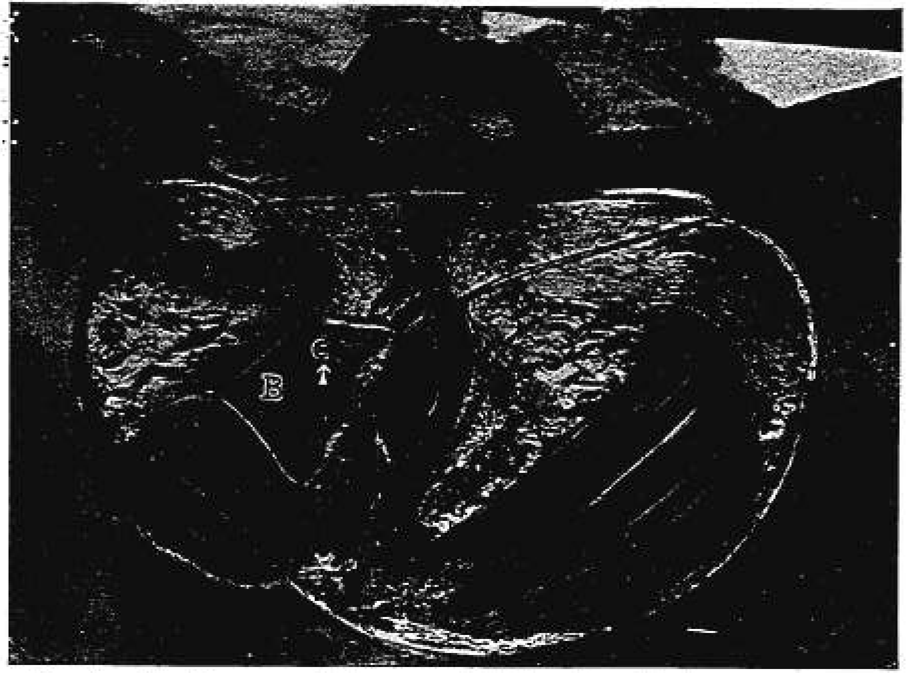

FIG. 2 shows the fascial compartment in the outer part of the ischio-rectal fossa, limited externally by the firm obturator fascia (B), which is the guide in entering the compartment. The compartment was here laid open, instead of by the incision A, Fig. 1, by an angular incision, one arm of which ran along the inner margin of the tuberosity of the ischium, and the other parallel to, and a little in front of, the lower border of the gluteus maximus muscle. C, transversely elevated band of tissue in anterior wall of fascial compartment, containing transverse perineal vessels and nerves and the base of the triangular ligament. *The arrow* indicates the direction of the puncture at the apex of the fascial compartment and its situation above the level of the transversely elevated band or base of the triangular ligament.

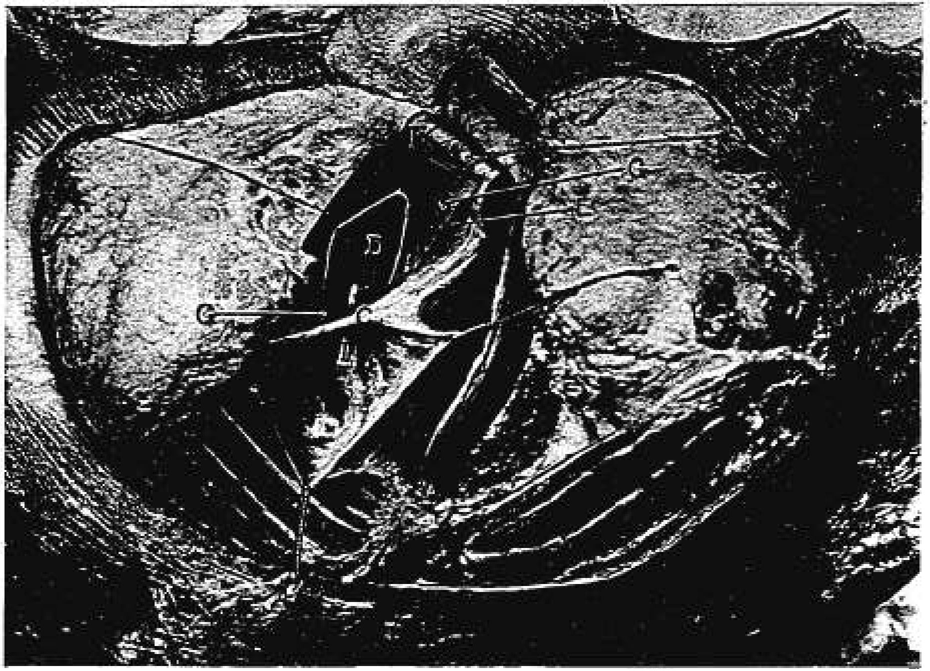

FIG. 3, shows the plane of cleavage along the anterior levator and fibres (D) above the triangular ligament, opened up. The base of the triangular ligament (E, posterior layer) on the right side has been cut transversely across, and the structures of the urethral triangle anterior to this dividing incision, together with a longitudinal slice of the adjoining ramus (F), have been reflected over to the left. C, transverse band, containing margin of triangular ligament and transverse perineal vessels and nerves, left in situ. I, stick passed through the slit at apex of fascial compartment above the level of the transverse band. G, G, internal pudic artery.

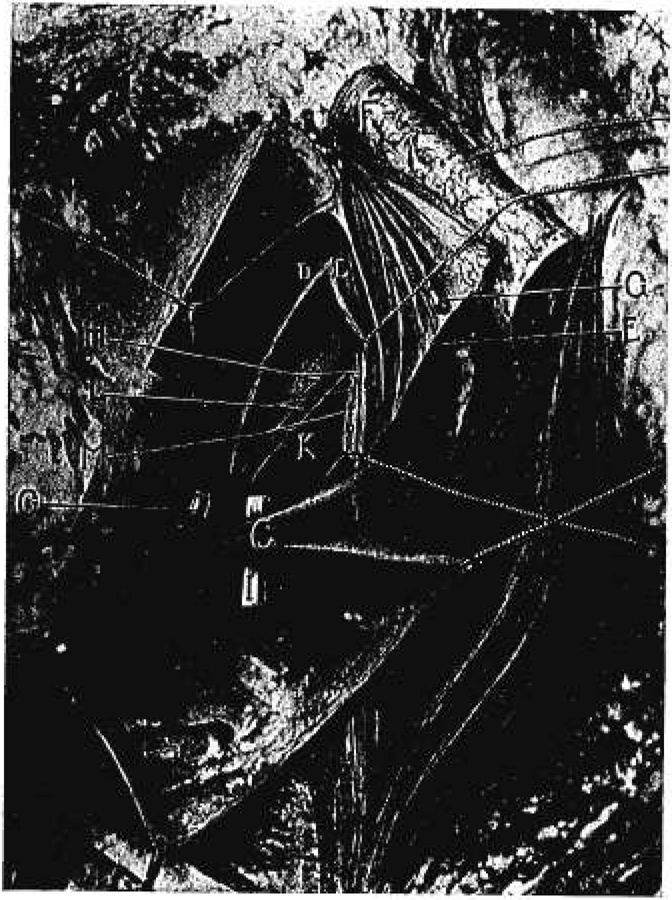

FIG. 4.—Shows the anatomical structures that would lie between a prostatic abscess, bulging toward the rectum and laterally, and the finger introduced through the fascial compartment of the ischio-rectal fossa (in the course of the stick I) into the plane of cleavage along the anterior levator ani fibres above the triangular ligament. D D, anterior levator ani fibres which have been split apart to show immediately above them the recto-vesical fascia (H.) This fascia has been cut transversely along the lateral margin of the prostate (K) together with the recto-urethralis muscle (L) and the fascia (M) lining the prerectal space. The prerectal space has been opened up by blunt tearing of the delicate connective tissue which normally maintains its obliteration, so that the rectum sags backward, and through the opening in the recto-urethralis muscle the situation of the base of the prostate (K) can be seen.

together with a longitudinal slice of the adjoining ramus (*F*), were then reflected over to the left, so as to expose the plane of cleavage above the triangular ligament to view. The bridge of tissue (*C*) left in situ, contained a small portion of the base of the triangular ligament, and the transverse perineal vessels and nerves. Above this bridge, through the slit at the apex of the fascial compartment, a stick (*I*) has been passed to show the course of the finger as it enters the dilatable area along the anterior fibres of the levator ani. The only possible danger to be guarded against when puncturing the apex of the fascial compartment, is that of injury to the internal pudic artery (*G*, *G*). This artery had to be severed in the dissection to permit the reflection of the tissues. It lies a little external to the site of making the puncture, being in juxtaposition to the puncture at a point just where it emerges from the fibrous compartment of the obturator fascia. Thence the artery passes forwards to enter the compartment of the triangular ligament, where it lies close to the ramus. It could only be injured by an outward cut, which should consequently be avoided.

Fig. 4 shows the relation of the prostate to the rectum and to the structures which would intervene between a bulging prostatic abscess and the finger which has been passed into and has dilated the plane of cleavage above the triangular ligament. The first of these intervening structures is the levator ani muscle (*D*, *D*) at its anteror aspect, the fibres of which have been split apart to show above them the next structure, which is the recto-vesical fascia (*H*) covering the side of the prostate (*K*, inferior aspect) and reflected down over the recto-urethralis muscle, to pass below between the external and internal sphincters of the anus. A transverse cut has been made in this fascia just below the edge of the prostate, to reach next the recto-urethralis muscle (*L*), which in turn has likewise been cut transversely across in the line of the incision in the fascia, being thus divided close to its origin from the side of the prostate. Beneath the recto-urethralis muscle is the fascia (*M*) lining the prerectal space. In this dissection the prerectal space, normally no actual space at all, but, as it were, a collapsed fibrous sac located between the rectum behind and the bases of the bladder and prostate in front, and capable of easy dilatation by blunt force, has been opened up, so that the rectum sags backwards, and the locality within this space corresponding to the base of the prostate (*K*) is seen through the opening in the recto-urethralis muscle.

In the case now reported, after having dilated the plane of cleavage along the anterior levator ani fibres above the triangular ligament with the finger, the abscess could be felt in the bottom of the wound as a prominent rounded elastic tumor, and was readily incised by a narrow-bladed knife passed along the finger. The artery to the prostate enters near the postero-lateral corner of the organ and ought not to be injured by the incision. The branches of the middle hæmorrhoidal artery, when present, lie close to the rectal wall antero-laterally, and would be pushed backwards out of danger by the bulging of the abscess. After the pus was evacuated, the cavity was drained with a tube surrounded with gauze. The *bacteriological examination* of the pus showed the infection to have been due to the staphylococcus.

Course.—The drainage material was rapidly diminished in amount so as not to interfere with the contraction of the abscess cavity. The wound healed from the bottom. On the fourteenth day the wound sinus was one and a half inches in depth. On the fifteenth day the patient left the hospital voluntarily. The wound healed uneventfully, and the patient had a perfect recovery.

This operation is suggested for cases of prostatic abscess of the kind here described which have not ruptured into the urethra and present a tense elastic tumor bulging toward the rectum. It is not recommended for cases where the abscess has ruptured into the urethra, when the operation of perineal section with drainage of the bladder advised by Alexander[1] would be undoubtedly indicated. Left to itself a prostatic abscess will open either into the urethra, into the rectum, or it will break laterally and then frequently burrow along the anterior levator ani fibres into the ischio-rectal fossa. Since the last mentioned route is a natural channel through which the pus of a prostatic abscess can discharge itself without liability of serious complication, it would seem not improper to employ this same route as the one of approach for the early evacuation of such an abscess. Alexander advises perineal section indiscriminately for all cases of prostatic abscess, with a view of avoiding sinus formation or recurrence that would follow improper drainage of the abscess cavity. The claim of the writer is that if one good result *can* be obtained by this method for the class of cases mentioned, in support of its employment for these cases, it can be said that the operation is certainly much simpler of performance than that of perineal section, the after-treatment does not require special surgical knowledge, the after-discomfort to the patient is less, the bladder is not exposed to any danger of infection, and there is no subsequent urinary fistula to be treated, all of which facts would certainly appear as advantages in offering this method for trial, over the more radical operation, even though the latter be capable of producing an undoubted good final result.

As compared with simple drainage of a prostatic abscess by the anterior perineal incision, going between the bowel and the urethral triangle, the possibility of doing which by a definite anatomical dissection has been shown in 1902 by Gosset and Proust[2], and in 1904 by the writer,[3] drainage by this diagonal lateral incision and approach through the ischio-rectal fossa would seem to have the preference for the following reasons: The route is direct and easily accessible; no danger of injuring the rectum or urethra; the scar is smaller and laterally situated.

The simplicity of this operation should at least appeal, if only as a temporary measure of relief, to the general practitioner who may be called upon to relieve one of these conditions under surroundings unfavorable for performing more than the simplest operative measure.

For the proper treatment to obtain healing of an abscess of the prostate opened by the lateral route, the writer would suggest the following requisites: (*a*) The free and dependent drainage of the abscess cavity through a wide opening in the abscess wall; (*b*) the early removal of the drainage from the deep portion of the wound, to permit collapse of the bottom of the sinus; and (*c*) particularly the avoidance of irritating disinfectants, such as bichloride of mercury, carbolic acid, and potassium permanganate, for the syringing of the sinus. Peroxide of hydrogen, which is the best antiseptic solution for cleansing an abscess cavity, or a solution of chinosol[4] 1 in 500, or simple boiled water alone should be used, none of which agents destroy tissue. As the deep part of the wound contracts, in order to insure its closure the drainage tube should reach only to within about two inches of the bottom, and should be progressively shortened as deep obliteration of the track takes place. As the discharge lessens and the track begins to granulate healthily, the closure of any sinus seems to be favored by suspending syringing altogether.

Lateral incisions for approach to the prostate have been reported by Dittel[5] in 1890, and by Delagénière[6] in 1900.

Dittel's method was employed solely for the removal of a lateral lobe of the prostate. He made his incision from the tip of the coccyx toward the anal margin in the median line, then around the external sphincter, ending at the perineal raphe in front. Delagénière recommended his method especially for hypertrophy of the prostate, also for abscess and malignant disease. His incision, which he called the longitudinal or parasacral incision, began at the base of the scrotum, descended in the median line to within two centimetres of the anal opening, turned thence in a semicircle around the anus, then followed the median line again to the tip of the coccyx, and finally passed along the lateral margin of this bone.

Both Dittel and Delagénière are indefinite as regards the surgical anatomy of their operations. They both insert a sound into the urethra to prevent its injury.

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